



**TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.**

# Army Strategic Energy Goals

Erik Kallio

August 9, 2010

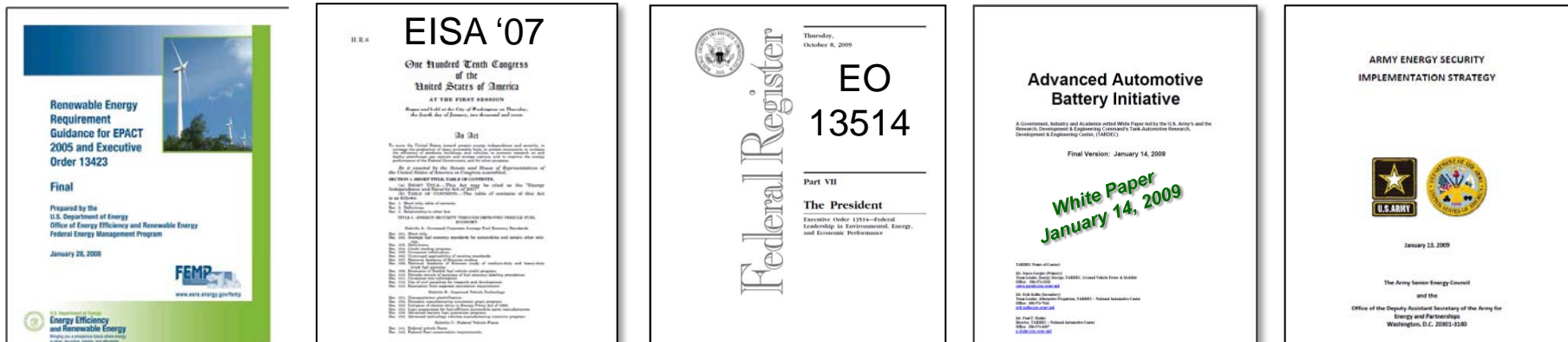
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## Army Strategic Energy Security Goals

- Reduced energy consumption
- Increased energy efficiency across platforms and facilities
- Increased use of renewable / alternative energy

Installation & Forward Operating Base (FOB) “Net Zero” electrical power production strategy (generated = consumption)

Forthcoming Operational Energy Initial Capabilities Document



Meeting energy & power mandates, goals, and strategy requires understanding of the challenge

## Alternative Fuels



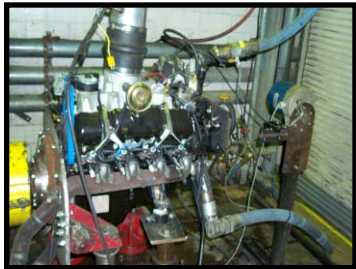
### *Fuel Evaluations*

- Chemical Composition
- Physical properties
- Fuel system impacts



### *System Evaluations*

- Fuel-system interactions
- System performance and durability
- Fuel specification inputs
- Suitability of fuel for use in Army equipment



### *Engine Evaluations*

- Fuel ignitability
- Fuel combustion
- Performance / durability

## Dual-Use Applications



## Alternative Fuel Vehicles & Infrastructure



**SANGB Hydrogen Filling Station**

## Advanced Mobile Microgrid



## Domestic Manufacturing Capability

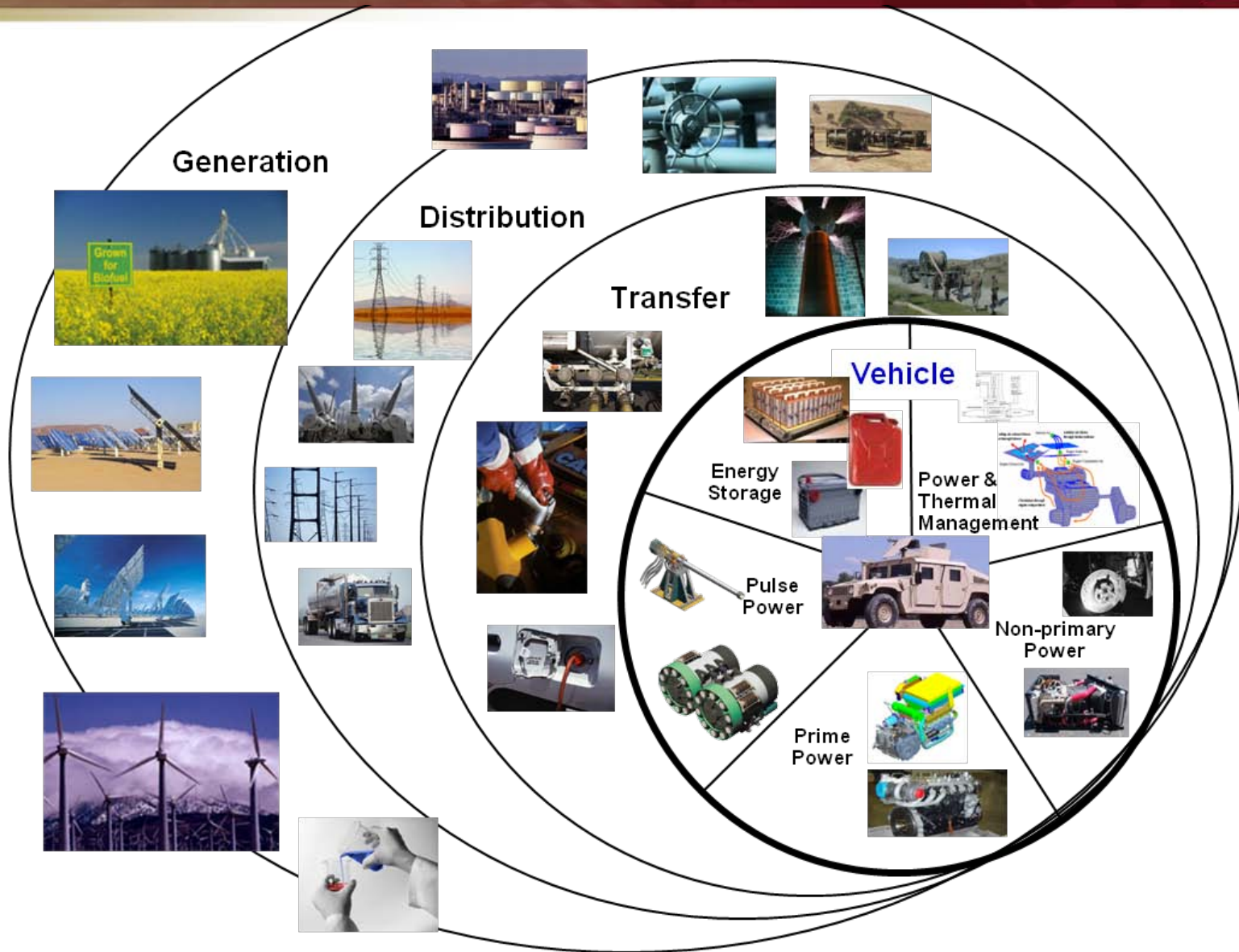


## Advanced Automotive Batteries Enabler of Alternative Energy

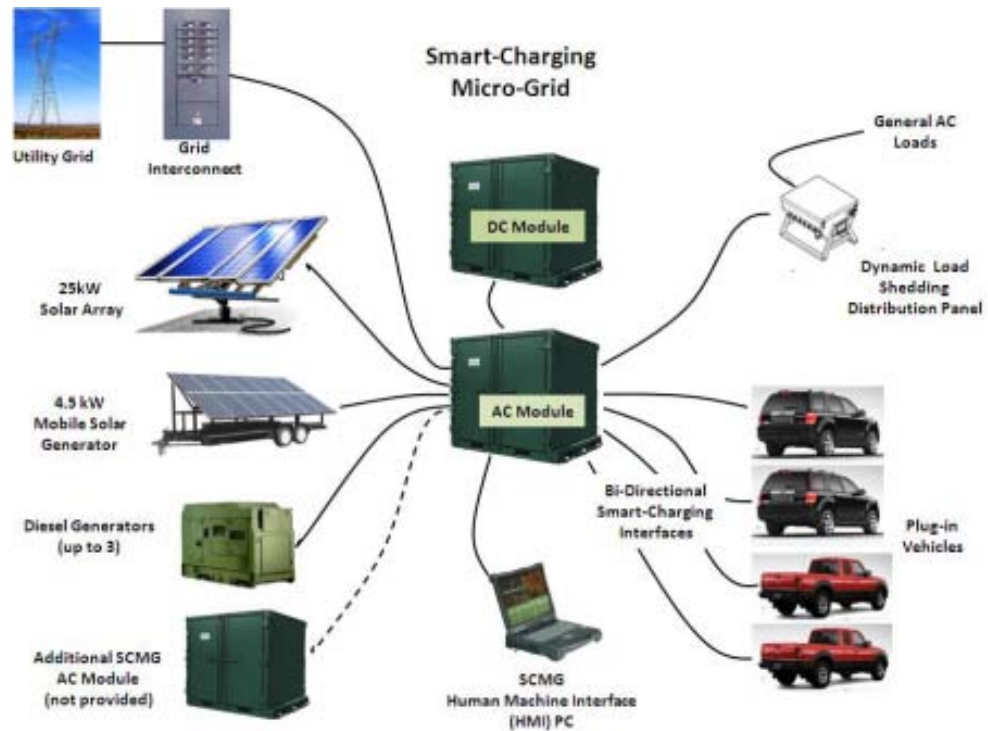


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- Installation of microgrid at Schofield Barracks, tied to critical infrastructure
  - Photovoltaic array
  - Dedicated electric vehicle charging
  - Grid connected
  - Conventional generator for extended backup power
  - Advanced stationary energy storage
  - Load management
- AC architecture
- Microgrid scheduled to be operational in August 2010
- Data collection and operational support for one year



## TARDEC

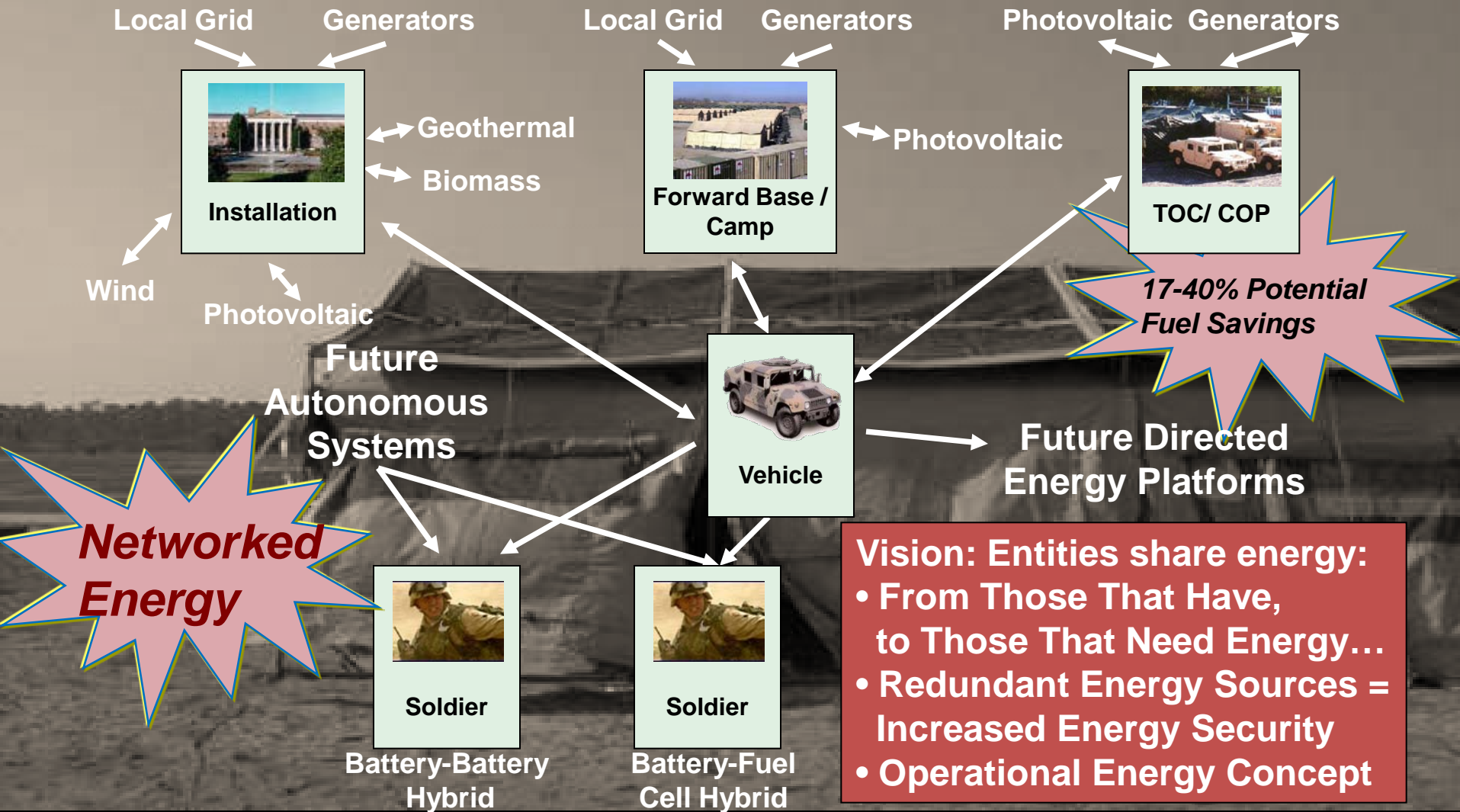
- Approved plan to procure an additional micro-grid for installation in Hawaii
  - Side-by-side architecture comparison
  - Incorporation of heavier weight class vehicles
  - Increased impact of transportation demands on infrastructure due to increased charging power requirements and larger on-board energy storage
- Partnership with the Corps of Engineers on modeling micro-grid performance

## Army-wide

- Renewed and strengthened partnership across RDECOM components in the areas micro-grid and intelligent energy management

## DOD-wide

- Expected upcoming efforts to coordinate similar efforts across the services under the Energy and Power Community of Interest



Improving energy capability through holistic power sharing - you're in the fight....!

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